

give rise to symptoms which simulate spinal cord tumor. If the industrial surgeon or neurosurgeon operating upon such cords is not informed in advance of the possibility of the herniation of some of the intervertebral cartilage, he can conceivably fail to find the real cause of the patient's symptoms. I wish to call attention to the fact that it is perfectly possible to have cartilaginous material protruded into the spinal canal without any narrowing of the intervertebral discs. These cases make it difficult to decide whether the trouble is due to herniation of the discs or not.

The demonstration of the cartilaginous material in the spinal canal can be accomplished very frequently by putting lipiodol in the spinal canal, and then examining the patient by means of a horizontal beam of x-rays, having the patient lie in the prone position at such an angle that the lipiodol lies along the anterior portion of the spinal canal in the region in question and, therefore, against the posterior part of the bodies of the vertebrae. By this method we have been able to demonstrate some protrusions of cartilaginous substance which would otherwise have gone undetected prior to operation. The value of the definite localization by this method is that it enables the operator to concentrate his attention on one disc, instead of having to expose and examine several vertebrae and discs.

For the benefit of those of us who do not read German or French freely, I would like to call attention particularly to the third reference of the authors, namely, the article by Armand A. Beadle. This I regard as the best exposition in English of the subject under consideration.

✱

FRANCIS M. MCKEEVER, M. D. (1136 West Sixth Street, Los Angeles).—Doctors Taylor and Bailey have presented a clear account of the findings on which a diagnosis of nucleus pulposus herniation can be based. Sensory, motor or reflex changes may show the segmental location of the pathologic change, but to localize this pathology in the nucleus pulposus is impossible without positive radiographic evidence of a disturbance in its volume. Either (1) a decrease in the height of the intervertebral disc or (2) an area of condensation in the spongiosa of the vertebral body adjacent to the disc must be present in the skiagram.

Except in the rare instance where there is an obvious roentgen narrowing of the intervertebral disc, with a history of recent trauma and, with or without neurological signs, it is impossible to assign as a causative factor of the lesion any one definite injury.

Roentgen and pathologic studies of vertebral body fractures corroborate the fact that a herniation of nucleus substance into the spongiosa must have occurred many months before it can be demonstrated on the roentgenogram. Eburnation in spongiosa following fractures is rarely evident sooner than twelve months after injury, and it is reasonable to assume that bone formation occurs even more slowly about a small spongiosa herniation. By the time roentgen diagnosis is possible in this type of nucleus pulposus herniation, the individual has become adjusted to the healed pathology and may be entirely symptom free.

It is to be remembered also that small spongiosa herniations are not infrequently an accidental roentgen finding with no symptoms referable to the area in which they are present. Until some means of earlier diagnosis is available, it would seem that too much significance must not be attributed to small spongiosa herniations when there is no evidence of narrowing of the intervertebral disc.

Narrowing of the disc between the last lumbar vertebra and the sacrum, with clinical symptoms and signs referable to this region, may require surgical measures. The fifth lumbar nerve is the largest trunk entering the lumbosacral plexus and escapes the bony case of the vertebral canal through relatively the smallest foramen, its margin of safety being nil. Any shrinkage in the volume of the lumbosacral intervertebral disc may lead to constant nerve-root irritation, with either low-back pain or the sciatic syndrome as long as motion is possible at the lumbosacral articulations. Under such conditions, obliteration

of motion at the lumbosacral junction by arthrodesis of the last lumbar vertebra to the sacrum may be the only way to obviate the irritation of the nerve trunk and effect relief.

✱

DOCTOR BAILEY (Closing).—The intraspous type of herniation of the nucleus pulposus is by no means infrequent.

Herniation of portions of the intervertebral disc dorsally into the spinal canal still remains a rare lesion, however. Mixer of Boston has recently published a series of thirty-four cases in which, by means of injecting comparatively large amounts of lipiodol (five cubic centimeters) into the spinal canal, dorsal herniation of the disc substance could be demonstrated radiographically. He feels that such a lesion in the lower lumbar region may often cause intractable sciatic pain.

THE LURE OF MEDICAL HISTORY[†]

RATIONAL OR LIBERAL MEDICINE^{*‡}

AS UNDERSTOOD SOME "FIFTY YEARS AGO"

By JOSEPH P. WIDNEY, M.D.
Los Angeles

PART I

I HAVE been asked to deliver an address upon the science of medicine. I have chosen as the heading of the address, Rational Medicine.

What is it? To understand fully what is meant by the term you must know the history of the science which it designates; for it has a history, running back through the centuries. Like every other great branch of human knowledge, time has been one of the elements in its growth. It is old; and yet it is new. It is old in that it represents today the gathered wisdom, the accumulated results, of ages of human thought and human experimentation. It is new in that the investigation does not cease, but rather with increasing momentum it is pushing its way into every newly discovered realm of collateral science to add to its store of knowledge, and throw more light upon the many problems of disease which yet remain unsolved before it.

HISTORY OF MEDICINE

What is its history?

To trace it you must go back side by side with the other great lines of human inquiry to the infancy of the race; for with man came into the world disease and death. In his birth were the seeds of dissolution, and life became a battlefield in which the elements tending to build up and perpetuate the human body and those tending to tear down and destroy, were ever at war with each other. Only the keenness of the human intellect, spurred on by the inborn love of life, was arrayed upon the side of life, and enlisted in the struggle against the forces of disease and death.

[†]A Twenty-Five Years Ago column, made up of excerpts from the official journal of the California Medical Association of twenty-five years ago, is printed in each issue of CALIFORNIA AND WESTERN MEDICINE. The column is one of the regular features of the Miscellany department, and its page number will be found on the front cover.

^{*}An address delivered by J. P. Widney, A.M., M.D., dean of the College of Medicine of the University of Southern California, before the Unity Club of Los Angeles.

[‡]Reprint from the *Southern California Practitioner* of April, 1888. (See also editorial comments on page 461 of this issue of CALIFORNIA AND WESTERN MEDICINE.)

It is probable that with the first pang of pain which came to man came also the thought and the attempt to do somewhat to ease it; and an added bitterness was lent to the first tear shed over a human grave by the thought, "Might not something have been done to stay the hand of death?" And born of these pangs came doubtless rude, blundering, yet planned efforts to that end. And this was medicine. Not a science as yet. It was still too crude, too infantile. And men had not as yet thought far enough in advance to even conceive of the idea of science. Yet, in so far as it involved thought, and plan, and design, and the adaptation of means to an end, it was the beginning of rational medicine.

But this had no history. The human race was already far on in the journey of civilization when history begins.

THE WRITTEN HISTORY OF MEDICINE

The written history of medicine, and its consecutive development, may be said to date from the fourth century before Christ, twenty-three centuries ago. It comes to us in direct line from those leaders of the mental life of the ancient world, the Greeks. While there are fragments of other writings dating from some centuries earlier among the Egyptians, and so-called systems of medicine of equally ancient date among the Hindus and other races, these never developed beyond their infantile stage of growth, and have contributed little, if any, to the medical knowledge of the world.

The Greeks, even at that early day, had sacred hospitals in which the sick received medical treatment. The two professions of the priesthood and medicine were then united, medicine being the special work of certain lines of the priesthood, and to it were devoted certain temples.

Hippocrates, the wise old man of Cos, a priest-physician, and himself born of a long line of priest-physicians, left a series of writings upon medical topics, which are even yet preserved in the literature of the profession. I have in my library these works, and while containing, of course, much that time has shown to be unfounded and puerile, they yet contain also many things which show him to have been a keen observer of disease, and to have discerned dimly much of truth. In these writings is to be seen one characteristic of true science, a breaking away from the superstitions of the age, and a desire to investigate the phenomena of disease as matters of reason. A comparison with contemporary branches of human knowledge shows that medicine stood fairly abreast of them in its stage of development.

Without attempting to follow medicine with any degree of closeness through the succeeding centuries, it is enough briefly to say that it passed with the spread of the Greek race around the east shores of the Mediterranean, having large schools in Alexandria; it shared in such scientific life as came to Rome; then felt the great scientific awakening which came with the flowering of the Arab race under Mohammedanism, the caliphs building and supporting large schools of medicine

in Asia Minor; then, with the decadence of the Arab race and the eclipse of Mohammedanism under the Mongol Turk, it underwent the vicissitudes which came to the human race during what have been termed the Dark or Middle Ages.

DEFICIENCIES IN ANCIENT MEDICINE

In summing up the work done by ancient medicine, and its contributions to the common fund of medical knowledge, these defects may be noted as, with occasional exceptions, characteristic of it: a lack of inductive methods in its reasoning, in other words the basing of its theories too much upon speculation, too little upon a proper basis of facts: a failure to prosecute with sufficient thoroughness those groundworks of all scientific medicine, the study of anatomy and physiology; yet, from the former of these it was in a measure debarred by prevailing religious prejudices: a failure to study morbid anatomy, that is, the changes made in the tissues and organs of the body by disease: a failure to compile systematically the phenomena of disease, and tabulate results.

Yet this style of work is hardly to be expected of the medicine of that age, as it was attempted in no other branch of science. The human mind was not as yet ready for that style of work. Science in all its departments, whether astronomy, chemistry, or others, was as yet only in the speculative age. Indeed, it seems to be characteristic of the earlier workings of the human mind, whether in the childhood of the race or of the individual, to theorize first, to search for the facts afterward. The careful, painstaking, scientific work of humanity was yet to be. It was still the age of myths, of fables, of speculation. Then, too, the necessary collateral sciences were also yet in their infancy. Men were still searching for the elixir of life and for the philosopher's stone. Even ages later they were still to wander hopefully over half a continent in quest of the Fountain of Youth. This tendency of the ancient world to build up theories and frame speculations, without a sufficient groundwork of accumulated facts upon which to base them, is shown in the elaborate yet profitless ratiocination of Plato's dialogues.

Yet, withal, progress was made. Men were gradually learning the scientific weakness which underlay theorizing without a sufficient groundwork of facts. Then, to, they were learning, as they struggled along in their rather aimless fashion, that certain tracks were only blind roads, leading nowhere, and need not be traversed again. They were gradually learning that, in certain directions, there is a limit to the knowable, and that to push investigation upon these lines is only waste and profitless labor. And most of all, and most valuable of all, they were patiently, age by age, accumulating a store of facts, things established by actual observation and test, such as the plainer principles of anatomy and physiology, the symptoms of disease, and its normal course and termination, a knowledge of certain drugs, and of their effects, the laws of epidemics, some of the relationships of climate and disease, some principles of hygiene, some of the rudiments of surgery. In

this way they were laying a foundation upon which might be built the inductive medical science of a later day. Then, too, allied sciences, such as botany, chemistry, pharmacy, microscopy, were developing to that point where they might lend their aid to the upbuilding of that rational medicine which was to arise from, and in a measure out of, the empirical work of all the preceding centuries.

PLACE TODAY [1888] OF RATIONAL MEDICINE AS A SCIENCE

How then does rational or liberal medicine stand today in its work as a science?

First, what has it done? What, so to speak, is its present stock in trade?

In answer it may be said that it has this store of accumulated and ever accumulating facts, which it has been slowly and toilsomely gathering during all these many centuries. Out of the vast range of its testing and experimentation, some things have remained as established. It has been literally obeying the injunction of the Scriptures, "Prove all things; hold fast that which is good." Like the science of mechanics, which, with all its vain searchings after perpetual motion, has yet proven and held fast to the wheel, the lever, the pulley, the inclined plane. This store of facts, which may be said to have been proven, is one, and no small, gain.

Then with the training which has come with these centuries of work, it has developed more accurate methods of investigation and of scientific inquiry. It has been learning how to work. It has also gained a better knowledge of the limits of the knowable; has learned, as before stated, that certain lines of apparent scientific investigation are only blind paths leading nowhere, and consequently it need not again tread them. In this way it is prepared to avoid much of the waste labor of the past. It has learned no longer to accept theories unless substantiated by an established groundwork of facts.

It has placed itself squarely upon the basis of an inductive science, reasoning only from the known to the unknown.

RATIONAL MEDICINE'S PROGRAM FOR THE FUTURE

What is the line of work as laid out by rational medicine for itself in the future—the line of investigation, of experimentation, and of study?

Anatomy, what may be called surgical anatomy, has its leading facts now well established, but microscopic anatomy and histology afford as yet comparatively unworked fields. This department of fine anatomy is in the line of future investigation.

Almost the same general statement may be made with regard to physiology, for while the function, the work done, by the organs and tissues of the body is fairly well understood, very much yet remains to be discovered before our knowledge in this direction may be said to be even tolerably complete. The difficulties surrounding this field

of work are much greater than those to be overcome in the further study of anatomy; for while anatomy is to be studied upon the dead body, with the knife at our command, physiology has to be studied through the living body with all the complicated processes of life going ceaselessly on.

The comparative anatomy and physiology of man and the higher animals is another field in which much may be done, for there are many principles, and many diseases, which they seem to have in common, and which may eventually be found to throw light upon each other.

Then comes the natural history of diseases, their habitat, causation—and under this heading is included the whole subject of microbes, bacilli, and disease germs in general—the laws of existence and development of disease, duration, natural termination, statistics of mortality, methods of propagation, contagion, pathologic changes produced by disease in the human body, manner of causing death, further investigation of the action of drugs both new and old, and the search for new remedial agents.

RATIONAL MEDICINE'S PLAN TO COMBAT DISEASE

What is the working plan of rational medicine in the management of disease?

Its first aim is to prevent disease—this subject being classed in works on medicine under the heading of Preventive Medicine. In this respect medicine stands in rather an anomalous position as compared with other professions. Its first work is a constant striving to destroy the grounds for its own existence.

This it is doing by elaborating and enunciating the principles of hygiene, of sanitation, of quarantine, of inoculation, of vaccination, of antisepsis.

Its second aim falls under the heading of Curative Medicine, the remedial management of disease when it has developed in the human body.

In this, the first effort is to eliminate, or remove, the cause when possible. As an illustration may be instanced, the emetic administered in case of an ingested poison, or to unload the oppressed and cramped stomach of a mass of soured food when digestion has for some cause failed of its work, and pain results; or, may be instanced, the purgative given to clear the bowels of their irritating contents when the undigested food has passed beyond the stomach, and colic supervenes.

Failing of the effort to remove the cause from the body, its next attempt is to destroy or counteract, if possible, that cause within the body. As illustration may be given the alkali administered to chemically neutralize the acid of a sudden indigestion, or of an imperfect digestion, until other measures may have time to remove the cause of the acidity. Also may be mentioned the action of quinin on malarious affections, or of the antiseptic to counteract the tendency to putridity.

Its work may, in another class of cases, be termed "assistant medicine." As an illustration, may be mentioned the muriatic acid and the pepsin given to aid the process of digestion where the

stomach is not secreting a sufficiency of these substances to carry on efficiently the digestive work; or the laxative given to arouse a torpid bowel to proper action; or the expectorant administered to stimulate the secretion of mucus in a bronchial tube.

In large part, however, its action is that of guiding, or directing, or assisting the powers of the body through the course of a disease. Many diseases have their natural course, which they will run, are self-limiting, and cannot be cut short by the use of drugs. The various continued fevers may be given as illustrations. In this class the work which rational medicine lays down for itself is to assist nature to carry the battle with disease to a favorable issue. It aims to guide, to support, to prevent complications. But all the while it never gives up the search after the hidden cause, which, if found, it may hope to destroy.

Yet there still remains another class of diseases in which cure is hopeless: in which there can be but one termination, death. Still, even with this class, there remains a work for medicine to do, for now comes in play that phase of its powers which may be termed "alleviative medicine." The failing forces of the body are to be supported, so that life may be prolonged. Pain is to be eased, so that life when so prolonged may be made endurable. And then when life may no longer be prolonged, when the battle has been fought and lost, when the end draws near, and man comes to pass through the valley of the shadow, one last office yet remains for rational medicine to perform, *euthanasia*, easing the pangs of dissolution, soothing the death agony, and smoothing the rugged pathway for the feet of poor broken mortality.

RATIONAL MEDICINE HAS NO DOGMAS

I have endeavored to give you a picture of the field, and the work, of what I have denominated rational or regular medicine.

But you say, you have told us nothing of theories, of dogmas. You have not given us its creed.

It has none. And in this very fact lies its strength. Herein is the omen of a hopeful future. It has outgrown such things. It is now out upon a higher, broader plane. Practically it has no general theories. It avoids them. It has felt too much of the evil of them in the earlier stages of its own development. There was a time when it had its creeds; when it vainly thought that a broad science could be expressed in a single formula. Men so thought also in mechanics, in chemistry, in astronomy. And they, too, with the scientific physician, have learned that while such things are attractive, they are misleading. They seem so simple, and so plain; and in medicine, as in other sciences, such a single formula would render the perplexing questions with which one meets, so simple; and generalizing is so much pleasanter than delving after facts; yet herein science has never found the pathway to truth. Medicine has grown more modest with the mistakes and the premature generalization of all these ages. It is no longer ashamed or afraid to say, "I do not know."

In so varied a field, with a causation so varied, and apparently so ever shifting, is any one general and final theory of disease and its treatment possible? With the present light which we are able to throw upon the subject the answer would seem necessarily to be that it is not; that the field must ever remain a composite one; and that the men or the schools which frame one single law for guidance do so because of a narrowness of vision which fails to take in the whole field, which can only see one aspect of a complex or varied problem, and which yet judges this to be all. For single diseases, or for allied groups or families of diseases, theories may be formed, subject, however, to change with each coming of new light; but so far the kinship has not been shown to be sufficiently widespread to justify the framing of one general law to cover either the causation or the cure of disease.

I have said that rational medicine has, in a certain sense, no one creed. This much only, it now generalizes. In pathology its only guiding law is—search for the cause of the disease; in therapeutics, or the management of disease—any means that will effect a cure. It is not bound or restricted, and refuses to so bind or restrict itself, either as to means or the manner of using the means.

(To be concluded)

* * *

ADDENDA

TO BIOGRAPHICAL SKETCH OF DR. JOSEPH P. WIDNEY

THE interesting biographical sketches of Dr. Joseph P. Widney, printed in CALIFORNIA AND WESTERN MEDICINE for April (pages 251 and 292), and May (page 396), evidently stimulating interest in the historical background of the California Medical Association and its component county societies, have received much comment, and it is to be regretted that, because of lack of space in the May issue, several items concerning the College of Medicine of the University of Southern California and Doctor Widney could not be included. They are now given, however, as of probable appeal historically to all readers, but particularly so to the many graduates of the University of Southern California, who are in active practice in the State.

Organization of Medical Department, University of Southern California, March 31, 1885

At a preliminary meeting of the profession, held at the office of Dr. J. P. Widney, March 31, 1885, to consider the advisability of organizing a medical department of the University of Southern California, the following physicians were present: Doctors J. P. Widney, A. F. Darling, H. H. Maynard, J. S. Baker, Joseph Kurtz, A. McFarland, F. T. Bicknell, G. W. Lasher, H. S. Orme, W. G. Cochran, W. Lindley, F. A. Seymour, and W. B. Percival. Doctor Widney, who had been elected dean of the faculty by the Board of Directors of the University, with power to organize the medical department, occupied the chair. On motion of Doctor Lindley, Doctor Percival was elected secretary of the meeting.

After calling the meeting to order and stating concisely the object of the meeting, Doctor Widney called on each one present for an expression of his individual opinion